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Functional foods and phytotherapeutic: use as agents of plant development and prevention of public health

Silva, Viviana (1); Coutinho, Filipe (1); Soares, Marta Isabel Oliveira (1,2); Iglésias, Raúl (2); Estevez, José Garcia (2); Vinha, Ana Cristina Ferreira (1,2)

1: Escola Superior de Saúde do Vale do Ave, Instituto Politécnico de Saúde do Norte, Cooperativa Ensino Superior Politécnico e Universitário, Portugal;

2: Laboratorio de Parasitología, Facultad de Biología, Universidad de Vigo, Espanha

E-mail: martaoliveirasoares@hotmail.com

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Abstract

The current way of life may cause the increase of chronic degenerative diseases, whose treatment is not always possible with pharmacological medication. The Diet Therapy and Phytotherapy are on the rise, associated with functional foods phytotherapeutic action. The antioxidant action of bioactive compounds depends on their chemical structures and their concentrations in food. The main objective of this study was to characterize and evaluate fourteen plants of green leaf of national culture in its physical-chemistry, levels of antioxidant compounds and synergistic effects between them, measured by the method of capture of free radical DPPH. The chemical parameters studied were water content, pH, ascorbic acid content and also total carotenoids. Influenced by the antioxidant activity and solvent-extraction technique, two methods of extraction and four kinds of solvents were used. The extracts were used to determine the level of phenolic compounds, the spectrophotometric method, the Folin-Ciocalteu reagent and expressed as gallic acid equivalents. The measurements were in triplicate using the analysis of variance (ANOVA) and Tukey's test, with significance level of 5%. All plants exhibited a positive relationship between the content of bioactive compounds and their antioxidant action ($p < 0.05$) but not in the chemical profile, although there is statistical significance. In evaluating the method extractor, all solvents showed greater efficacy in method I, promoting the relationship between the solvent and extraction time ($p < 0.05$). Methanol is the solvent with a higher rate of extraction followed by ethanol, boiling water and water at room temperature. All extracts exhibited similar values of inhibition obtained by the synthetic antioxidant BHT. The spinach, broccoli, cabbage, hand, watercress and turnip showed high antioxidant action, values above 70%. Antioxidant action with moderate (50-70%) are the extracts of lettuce, Brussels sprouts, lombardy and cauliflower, while the endives, red cabbage and curly kale had weak antioxidant action. All plants showed levels of ascorbic acid, carotenoids and phenolic compounds different. The synergism between the composition and actions of antioxidants was observed, showing the interest in consumption of vegetables in the diet and its action phytotherapeutic the quality of public health.